

# ORGANIZATIONAL STUDIES AND COMPLEXITY: STACEY AND MORIN

## *ESTUDOS ORGANIZACIONAIS E COMPLEXIDADE: STACEY E MORIN*

Submission: 01/04/2016

Accept: 20/04/2018

Sérgio Luis Boeira<sup>1</sup>

Ana Elise Cardoso Inácio<sup>2</sup>

Jorge Altair Pinto Stürmer<sup>3</sup>

## ABSTRACT

This theoretical essay aims to identify some approaches to the complexity of comparing contributions of internationally renowned authors as a reference in organizational studies, such as Stacey and Morin. In the literature that deals with the theme of complexity, many similar concepts are observed; several contributions of authors, some trained in natural sciences, others in the human sciences and philosophy. It is a theme that is recognized both inter and transdisciplinary, and it has been gaining pulse since the 1980's. The conclusion is that Stacey and Morin have significantly contributed to the understanding of the organizational process and the differences between their approaches can be understood by comparing their life experiences and academic training. Furthermore, it is evident that overtime Stacey supports the critical and broad approach advocated by Morin complexity. On the one hand, while Stacey remains in the social sciences, Morin articulates social sciences as well as biophysics and philosophy. Regarding existing disputes in the field of complexity studies, this comparison indicates an improvement from the perspective of complexity intelligence (Latin culture) over the angle of complex adaptive systems (Anglo - Saxon culture).

**Keywords:** Organizational studies. Complexity. Self-organization

---

1 PhD in Human Sciences (UFSC, 2000), current work in the Department of Management Sciences; Postgraduate Program in Administration (PPGA of UFSC) and the Interdisciplinary Postgraduate Program in Human Sciences (PPGICH of UFSC). E-mail: sbsergio762@gmail.com. ORCID: <https://orcid.org/0000-0002-1999-5373>

2 PhD in Administration from the Federal University of Santa Catarina (UFSC). Public Employee of the State University of Santa Catarina in the position of Administrator (UDESC). E-mail: anaelise.sc@gmail.com. ORCID: <https://orcid.org/0000-0003-4170-0583>

3 Master in Administration from the Federal University of Santa Catarina, currently taking the PhD course. E-mail: jorgesturmer@hotmail.com. ORCID: <https://orcid.org/0000-0002-8969-5237>

## RESUMO

*Esse ensaio teórico visa identificar alguns enfoques da complexidade comparando as contribuições de autores internacionalmente reconhecidos como referências nos estudos organizacionais, como é o caso de Stacey e Morin. Na literatura que trata da temática da complexidade, são observados diversos conceitos semelhantes, diversas contribuições de autores, alguns formados em ciências naturais, outros em ciências humanas e na filosofia. Trata-se de uma temática reconhecidamente inter e transdisciplinar, que ganha impulso desde a década de 1980. Conclui-se que Stacey e Morin têm relevantes contribuições à compreensão do processo organizacional e que as diferenças entre suas abordagens podem ser compreendidas comparando-se suas trajetórias de vida e de formação acadêmica. Além disso, constata-se que Stacey aproxima-se ao longo do tempo da abordagem crítica e ampla da complexidade defendida por Morin. Mas enquanto Stacey se mantém no âmbito das ciências sociais, Morin articula ciências sociais, biofísica e filosofia. No que se refere às disputas existentes no campo de estudos da complexidade, esta comparação sinaliza um avanço da perspectiva da inteligência da complexidade (cultura latina) sobre a perspectiva dos sistemas complexos adaptativos (cultura anglo-saxônica).*

*Palavras-chave: Estudos organizacionais. Complexidade. Auto-organização.*

## 1 INTRODUCTION

Reed (1999, p. 61) declares that the historical roots of organizational studies can be found in publications that date back to the second half of the 19th century. This indicates the “triumph of science over politics”, as well as “the victory of order and the collective progress, conceived rationally over the human recalcitrance and irrationality”. Contemporarily, according to Reed, scholars are bewildered, as their past ideological convictions are being questioned. There is no more certainty about the nature of the organization and the adequate intellectual means to research.

He highlights that in contemporary academic works “what predominates is complex, uncertain and confused expectations over the nature and merit of organizational studies.” (Reed, 1999, p.62). According to Reed, we are experiencing a revolutionary science phase and no longer a standard science in Kuhn’s terms. The current phase characterizes itself by the emergency and questioning of the common assumption over the object of study. While the “interpretation models and knowledge itself are exposed to continuous criticism and reevaluation”, there are conflicts concerning the “ideological and epistemological grounds”, thus, generating “fragmentation and discontinuity”. (REED, 1999 p. 63)

Also, in the sense of fragmentation critique, Fadul, and Mac- Alister da Silva (2009, p.360) question the disciplinary limits and possibilities of the public administration and the organizational studies. They observe that the subject of organizational studies “can be designated by various terms, depending on its independence status or its pertinence, and the science or discipline to which it belongs”. When conceived as independent, it is a discipline resulting in many others, such as engineering, philosophy, administration, economics, and sociology, to the extent that the term organization is taken as a complex system (CASANOVA - 2006). Japiassu (2006) reinforces this idea when considering that the science of organization is characterized by its transversality in connection to others, thus, turning it into a hyper-discipline.

On the other hand, Guerreiro Ramos (1981, p. 198) used to say at the beginning of 1980’s that the “theory of organization had accomplished its mission” within the limits of the dominant interests. “The comprehension of this fact has paved the way to an elaboration of a multidimensional science of organization.” Such ideas amplified Reed’s questioning by introducing inter and transdisciplinary questions to the debate about the epistemological crises of the organizational studies, thereby connecting this field to the field of complexity studies.

In more recent studies, (SERVA, 2013; MARTINET; PESQUEUX, 2013), problems that involve science in general from a more specific issue of the epistemology of administration or management science is clarified. In both cases, the complexity question remains, challenging researchers to understand limits, possibilities, and consequences of the disciplinary division as well as interdisciplinary and transdisciplinary articulations. These and other studies, go deep into a debate, foreseen by Séguin and Chanlat (1992, p. 71), in a great collection of diversified approaches to the analysis of the organization, announced in the early 1990's the emergence of "un nouveau paradigme: le paradigme de la complexité."

This essay analyses Morin and Stacey, two outstanding authors in the field of complexity studies, with the goal of better understanding the different approaches to themes of transversal to two of the most relevant trends in the context of the field of formation and dispute. Morin's work stands out in continental Europe, especially in France and countries of Latin culture, while Stacey's work has gained crescent attention in the Anglo Saxon culture, especially in the UK and The United States. Further on in this essay, we will see that some authors point out this cleavage among cultures and societies is a prominent aspect in the field of the studies of complexity. Therefore, the comparison between the chosen authors' trajectory and ideas may contribute, in an indirect manner, to the understanding of the crises that are affecting the field of organizational studies.

This essay is structured in six sections: 1 Introduction; 2 Perspectives of complexity; 3 Morin's trajectory; 4 Stacey: Self-organization, creativity, and complexity; 5 Morin: Complex thinking and theory of the organizations; 6 Final considerations: Comparison between Morin and Stacey.

## 2 PERSPECTIVES OF COMPLEXITY

There are many approaches concerning "complex organizations" (PERROW, 1973; ETZIONI, 1961; WESTRUM; SAMAHA, 1984) that use bureaucracy and the crescent division of work as indicators of complexity, an approach that developed itself from the sociology of organizations under the influence of North American functionalism and institutionalism. The so-called theory of complexity is related to management, essentially influenced by the Santa Fe Institute and the Santa Fe Group (BATRAM, 2004; GELL-MANN, 1996; KAUFFMAN, 1995). Etkin is one of the pioneers in the introduction of the paradigm of complexity in the field of organizational studies in Latin America. (ETKIN, 2000; ETKIN, 2003; ETKIN; SCHVARSTEIN, 2005). He highlights the principle of policing in the organization process, as well as the questions related to power, contradictions, and ambivalence between order and disorder in the organizations. Sotolongo and Delgado (2006) question what they call the "La revolución contemporânea del saber y la complejidad social" in search of new types of social sciences. Currently, the term complexity makes itself present in ample varieties of sciences, denoting an epistemological crisis with incalculable repercussions (BENKIRANE, 2002).

Moreno (2002) also contributed to the search for enlightenment concerning the understanding of different perspectives and authors that deal with the theme of complexity. Distinguishing mainly six groups/approach: a) Santa Fe Institute: Murray Gell-Mann, Christopher G. Langton, W. Brian Arthur, Stuart A. Kauffman, Jack D. Cowan; b) systemic perspective by Fritjof Capra; c) Prigogine school; Ilya Prigogine, Isabelle Stengers; d) Niklas Luhmann's work; e) Edgar Morin's work; f) Palo Alto school: Gregory Bateson, Paul Watzlawick, Marcelo Pakman and the School of Madrid.

Alhadeff - Jones (2008) considers that there are three generations of complexity throughout history and science and two perspectives or traditions (Anglo-Saxonic, and Latin) that dispute the hegemony in the world.

The theory of systems, cybernetic, notions of organized complexity marked the first generation (Circa 1940's and 1960's). In this generation mathematicians, engineers, and physicists, also stood out, followed by biochemists, physiologists, and psychologists.

The theory of systems, computer science, engineering, management science, artificial intelligence, self - organization evolutionary biology (dissipative structure, catastrophe, chaos, and fractals) would mark the second generation (from 1960 to 1980). Biologists, physiologists, and psychologists conquered their space in this generation and there was a confrontation between instrumentalism versus constructivism.

The third generation (the 1980's) perspectives, one in an English-speaking country and the other in a Latin-speaking country, competed for the hegemony in the field of the studies about complexity. The two perspectives of the third generation are: a) Perspective of the studies about complex adaptive system, emphasizing the Santa Fe Institute (The U.S.A); b) Perspective of the studies about the intelligence of complexity, highlighting the work of Edgar Morin (especially ideas spread across Europe and Latin America).

Santa Fe Institute (1984) differs from Santa Fe Group (1996). The first focus on research and teaching, while the latter focus on international consultancy in business strategies. Since 1960 Morin has been running a study center called Center Edgar Morin (Paris). Latin America saw the creation of many research institutions since the 1990's (BOEIRA, 2014).

In retrospect, it is possible to realize, in the history of sciences, that at the end of the 19th century and beginning of the 20th century, science was following a trajectory towards the search for autonomy regarding philosophy; a rupture process that started especially in the 17th century, mainly with Descartes' work.

During the first decade of the 20th century, science faced a crisis started by physicists and other natural scientists, (PRIGOGINE; STENGERS, 1991). Followed by inter and transdisciplinary articulations with biologists, engineers, social scientists, and philosophers, with repercussions in the human sciences from the contribution of phenomenology, hermeneutics, dialectics, and constructivism (APOSTEL *et al.*, 1982). Such articulations, inter and transdisciplinary, are hardly ever institutionalized, given that they are against the division of corporatist work of university institutions. On the other hand, a partnership between researchers gains more meaning and viability with the transformations in the media and civilizational crisis (crisis in the sense of modernity and industrialization).

From the interactions between different fields of study, new concepts present themselves. Morin (2000), for instance, refers to poly-transdisciplinary projects and objects. He introduces the discipline as an organizing category which has instituted the division and specialization of scientific work. He raised the issue of specialization and the risk of hyperspecialization, the extra-disciplinary point of view, interdisciplinary migration and invasion, reorganizing cognitive schemes, the paradigm problem, and the eco-disciplinary and multi-disciplinary concepts. Concepts, which according to the author, do not belong in the official history of science. However, it enables us to understand the real history of scientific knowledge and its relationship with non-scientific knowledge.

In the field of organizational studies, exist the notions of complex and adaptive systems, the theory of complexity, the paradigm of complexity, self-organization, complex thinking, and other processes that denote a process of approximation and dialogue between sciences, and the relation between scientific and non-scientific knowledge. In the national administration literature, the Anglo-American, European, and Latin American strand are barely distinguishable in the complexity approach. This is attributed to Morin, the authorship of the complexity theory, however, this author does not use such terms in his literary work. However, the notions of

complex thinking and paradigm or epistemology of complexity, distinguish his focus from what he calls the restricted approach to complexity. (AGOSTINHO, 2003; MORIN, 1986a; 1986b; 2005; 2007a; 2007b; WITTMANN, 2008; BORGATTI NET, 2008; SERVA, M., DIAS, T., ALPERSTEDT, 2010). Almeida (2008) and Mariotti (2010; 2013) Brazilian, authors who make this distinction between complexity strands, acknowledge tensions and possible dialogical articulation between them. In an attempt to contribute to a debate in this theoretical and epistemological turbulent context, below we will introduce the trajectory of both authors who are the subject of this essay.

### 3 THE LIFE TRAJECTORY OF MORIN AND STACEY

To contextualize Morin's work, it is important first to introduce some bibliographical data highlighting his intellectual trajectory. Morin was born in Paris, on July 8th, 1921, in a Spanish Jewish family, with ancestors in Tuscany and Salonika. His Jewish heritage made him feel different and lonely, due to humiliation and prejudice he experienced during his school years. He also lost his mother at the age of 9. Influenced by romanticism and rationalism, he was hungry for knowledge, culture, and different literary works, including the theater and cinema. During his teenage years, he used to walk between pacifism and socialism. He joined the Communist Party in 1940, expelled in 1951 (KOFMAN, 1996; BIANCHI, 2001). In Sorbonne, he enrolled simultaneously in the following courses: history, geography, anthropology, and philosophy. Concluding his studies in 1942, he became a voluntary combatant of the resistance as lieutenant of the French army (from 1942 to 1944). His time a lieutenant "made him understand and reflect upon the value of life and death" (PETRAGLIA, 1995, p.21).

In 1969, he went to the United States where he studied the theory of systems, cybernetic, information theory, and biology/ecology. He was interested in the conceptual development of the idea of self-organization and such principles as dialogic, organizational recursion and hologram. These became the basis for a way of thinking that combines without merging and distinguishes without separating different forms of knowledge, besides integrating uncertainty and designing the organization as a complex phenomenon.

Morin became associate director of transdisciplinary studies (sociology, anthropology, and politics) of the École des Hautes Études en Sciences Sociales. His research activities also led him to head the European Agency for Culture (UNESCO). His most significant work is *La Méthode*, in six volumes (begun in 1977 and completed in 2004). Since 2006 there is in Mexico a university called Real World Multiversity Edgar Morin.

As for Ralph Stacey's trajectory, he was born in Johannesburg, South Africa, on September 10, 1942 (his father was an English immigrant and his mother a South African descendant of Scots). He was awarded a scholarship and obtained a Bachelor of Commerce degree in law from the University of the Witwatersrand. He studied economics and received a scholarship to study at the London School of Economics where he completed his doctorate in 1967 with research on the construction and estimation of econometric models to predict industrial development patterns. He lectured economics at the University of the Witwatersrand before moving to London in 1970 and worked at the Commercial Aviation Department of the British Steel Corporation to forecast demand and prices for a range of steel products. In 1972, he began working as a manager in the Corporate Planning Department of an international construction company (John Laing). After that, he became an investment analyst for a bank and then in 1985 he went on to work in management consulting before becoming a senior lecturer at Hatfield Polytechnic. This organization became the University of Hertfordshire (UK) in 1992, and the same year Stacey was appointed

Professor of Administration, having coordinated a master's / doctoral program. He is the director of the Complexity Management Center at the Business School at the same university. He also makes part of a psychotherapeutic group, the Institute of Group Analysis in London.

Stacey has two distinct phases in his professional career with different approaches, although he maintains some similar questions: in the first, he worked with econometrics and strategic planning, accumulating frustrations as a result. He could not answer the reasons leaders, politicians, and managers were so wrong in their predictions, and despite the undesirable consequences of their actions, they continued the same strategic planning processes.

In the second phase, Stacey began working on the themes of chaos theory, systems, complexity, and creativity, especially after he formed a team with Patricia Shaw and Douglas Griffin. In this second phase, he started to defend the idea that leaders and managers erred in their predictions because in management there is no rational, analytical decision making, but a fundamentally political process. He attempted to integrate traditional management theories with the notion of organizations conceived as complex adaptive systems, including elaborating a diagram that became known as the Stacey Matrix.

Later, frustrated with the use of the concept of complex adaptive systems, he argued that it is invalid insofar as it is intended to apply natural sciences to understand human action. Stacey went on to argue that the sciences of complexity are a source of analogies which, for the understanding of human action, require specific interpretations, since human agents are self-conscious, emotional, thoughtful, reflexive, often spontaneous, and interdependent. Stacey and her colleagues study the domain of human action as a set of complex processes of interpersonal relationship, considering aspects such as communication, power, ideology, values and norms, habits and organizational learning. It has become noticeable Stacey's growing emphasis on the use of qualitative methodology since 2005. He began to reject the notion of systems to characterize organizations, choosing to defend what he calls the complex responsive processes and complex responsive processes of relating perspective referring to the idea of sensitive processes with complex answers. There is also an increasingly critical and public-interest stance.

## 4 STACEY: SELF-ORGANIZATION, CREATIVITY, AND COMPLEXITY

Stacey goes on to question the dominant theories of management since his work entitled *The chaos frontier: creative, strategic control for business*, 1991. Hitherto his concerns were more conventional, associated with the so-called functionalist paradigm, econometrics, and strategic planning. Creativity and complexity emerged as themes connected with the chaos theory.

Stacey (1996) states in *Complexity and Creativity in Organizations* that he is particularly interested in reflecting on the reasons why the many organizational "rescuings" have become so similar to their predecessors. Stacey (1996, p. 1) states that "[...] despite the initial, promising appearance of difference, in the end, yielding much some disappointing result".

The author then invites the members of organizations to work with a new frame of reference to understand organizational life.

Stacey presents (STACEY, 1996, p.3) what he calls the "dominant management paradigm and the vicious cycle in dealing with it," pointing out the steps taken in the search and use of savior recipes supposedly capable of solving all organizational problems. The author tells us that we are accustomed to using a shared framework of references that have been reproduced for a long time and that present flaws because it does not observe the particularities of each organization.

Organizations, according to their argument, seek stability and control, and by accomplishing this quest, they fear failure and anxiety. This fear causes them to start looking for “recipes” to achieve success, but by using those recipes without observing their particularities and complexity, they lead to disappointment.

Stacey defines in 1996 organizations as complex adaptive systems, thus adhering to the central thesis of the Santa Fe Institute, created in 1984. According to the author, a complex adaptive system consists of some agents interacting with each other according to schemas, that is, rules of behavior that are necessary for the monitoring that each agent does of another, adjusting their behavior in the light of the actions of others. For Stacey, complex adaptive systems learn and evolve, often interacting with other complex adaptive systems.

They survive because they learn or evolve adaptively: they compute information to extract regularities, building them into schemas that are continually changed in the light of experience (STACEY, 1996, p. 284).

The author’s thinking has become progressively critical to the dominant literature in management, including the themes of strategy, organizational learning, contingency, and institutional analysis. Even theories of chaos and complexity have been used conservatively, he says (STACEY, 2010).

In 2006, Stacey edited, in partnership with Robert Macintosh, Donald Maclean and Douglas Griffin, the collection *Complexity, and organization: readings and conversations*, which brought together several authors related to the complexity sciences. One of the themes discussed was the relationship between natural systems and social systems, that is, to what extent the notion of complex adaptive systems based on natural science research and computational resources could be used consistently in the social sciences. This debate remains very current, and the positions of each author, in general, depends on their academic trajectories, their research experiences and their involvement in multi or interdisciplinary groups.

In Stacey’s trajectory, the notion of complex adaptive systems becomes questionable as qualitative research on organizational dynamics advances. By engaging with the Institute of Group Analysis and doctoral research in business administration, he and his colleagues at the University of Hertfordshire’s Complexity Management Center now advocate in their publications the idea that organizations “are not systems”:

We argued that organizations are not systems but the ongoing patterning of interactions between people. Patterns of human interaction produce further patterns of interaction, not something outside of it. We called this perspective complex responsive processes of relating (STACEY; GRIFFIN, 2005, p. 1).

Stacey and Griffin reflect on the consequences of the complex responsive processes perspective in organizational studies, suggesting that it induces a closer view of everyday life. They affirm that there are two significant consequences of this perspective: a) no one can stay out of their interaction with other people. In dominant thinking, say the authors, an organization is seen as a system situated at a level above the individuals who compose it. It is recognized that such an organizational system is affected by the patterns of power and economic relations of society in general; these patterns are usually thought of as forces that are beyond the organization and its members, forces that shape the local forms of experience. b) there is no program, project, or plan for the organization as a whole. It only exists to the extent that people consider them in their local interactions. Any statements by those who hold the most power over projects, visions, and values are understood as gestures that demand answers from many people in their local in-

teractions. Those in command positions may choose their gestures but will not be able to determine the responses of others, so the outcome of their appeals often produces astounding results.

There are subtle and complex implications of this perspective regarding research methodology, which the authors address (STACEY, GRIFFIN, 2005, p.9, 10), but will not be discussed here because it would lead us to escape the primary focus of this study.

Stacey and Griffin (2006) continue to focus on qualitative research from the perspective of complex responsive processes, but this time approaching public health and education organizations. It is a very relevant initiative given the institutional interaction between the systems and subsystems that involve federal agencies, a challenge for research with reference in complexity, especially when the methodology is qualitative and has a transdisciplinary approach, considering anthropology, psychology, and micro sociology.

In 2010 Stacey published *Complexity and organizational reality: uncertainty and the need to rethink management after the collapse of investment capitalism*. It is a work of maturity, which updates a version published in 2001. Stacey takes a look at the financial crisis triggered mainly in the United States in 2008, with worldwide repercussions. He emphasizes the criticism to the dominant discourses in management (the functionalism, the managerialism, the strategic planning) that did not foresee the crisis in the face of its conservatism and attachment to the so-called sciences of certainty.

Stacey's central thesis in this work is that his new way of thinking - the perspective of complex and sensitive processes - is needed to deal with both the collapse of financial capitalism and the failure of market-based managerial prescriptions.

The author (2010) considers that the insights of the complexity sciences continue to occupy a marginal space about the dominant thought and practice in spite of the opportunistic use of discourse aspects of complexity in organizations and research centers in administration. Some claim that the science of complexity lacks rigorous tools or models to operationalize the theory, but Stacey disagrees with this idea, arguing that the lack of a sophisticated approach in the field of organizational studies and organizations is probably more related to the fact that it threatens the professional identity of managers and directors. According to the author, they fear the loss of the image that they are in control of organizations.

He advocates the need for in-depth research into the specific realities of each organization, including the public sector, but without the pretense of gaining security and power. At one point he makes a general assessment of contemporary organizational reality:

The organizational truth is often one of corruption and greed which the imported way of thinking is ill-equipped to deal with because it ignores ethics and when it does recognize ethics, it does so in a dualistic way in which blame for wrongdoing is directed at 'the system' and a few powerful scapegoats (STACEY, 2010, p. 50).

Stacey's work has not only contributed critically to the management of organizations but also constructively, as evidenced by consulting work (STACEY, 2012, STACEY and MOWLES, 2016).

## **5 MORIN: COMPLEX THINKING AND ORGANIZATION THEORY**

Morin has developed a critical approach to all modern/classical science from what he calls the Great Western Paradigm (GWP), a breaker-reducing paradigm or a simplification paradigm. Cartesian dualism is pointed out by him as the basis of a disjunctive-reductive view. The GWP was

“imposed by the developments in European history since the seventeenth century” (MORIN, 1991, p.194). The GWP separates not only the subject from the investigated object, each with its sphere but also philosophy (reflective research) of science (objective investigation). This dissociation continues, “crossing the universe from one side to the other” (MORIN, 1991, p.194). The author points out two sets of concepts in polarities that constitute the GWP: subject-object, soul-body, spirit-matter, quality-quantity, purpose-causality, sentiment-reason, freedom-determinism.

For the author, the GWP can be considered, in fact, a paradigm, insofar as it determines the sovereign concepts and prescribes the disjunction as being the fundamental logical relation. For the GWP, non-obedience to this disjunction can only be clandestine, marginal, and deviant. The GWP determines a double view of the world: on the one hand, there is a set of objects submitted to observations, experimentation, manipulations. On the other hand, there is a set of subjects which brings problems such as existential, communication, consciousness, and fate (MORIN, 1991). From this point of view, the GWP would command the dual nature of Western praxis: on the one hand, the cult of individualism and racism; on the other hand, the emphasis on science and technique as objective and obsessively guided by the quantitative treatment of the relevant empirical data. In this way, the “antagonistic developments of subjectivity, individuality, soul, sensibility, spirituality, and those of objectivity, science, and technique, depend on the same paradigm” (MORIN, 1991, p. 195).

For the author, there are two “universes” that vie between societies, lives, spirits. “[...] one can be positive only when the other becomes negative; one can only be real if the other is referred to as an illusion”. In one, the spirit is nothing more than an “efflorescence, a ghost, a superstructure,” while in the other, the matter is nothing more than an “appearance, a weight, a wax that the spirit shapes” (MORIN, 1991, p. 195). Western humanism says Morin (1991, p. 195), “consecrates the disjunction between the two universes,” though it is already installed in both. Science, on the one hand, eliminates the subject, and on the other, it becomes its instrument of domination.

In short, the type of culture created by the disjunction between subject and object needs to migrate from state to state on a daily basis, overcoming the barriers that divide the two universes. Thus, because they are considered to be disjoint and separate, the subject and the object “play hide and seek,” by hiding and manipulating each other. “The particular schizophrenia of our culture gives each one at least a double life” (MORIN, 1991, 196), says the author, which made explicit below:

On the one hand, an existential and moral life, with the presence and intervention of inner experience, a view of things and events according to subjectivity (qualities, virtues, vices, responsibility), adherence to values, impregnations and contaminations between judgments of fact and value judgments, global judgments; on the other hand, a life of determinist and mechanistic explanations, of partial and disciplinary views, of disjunction between de facto judgments and value judgments. Thus the daily life of each is itself determined and affected by the great paradigm (MORIN, 1991, p. 196).

Overcoming the classical alternatives is for Morin the enormous challenge of modernity. Such options – between unity and diversity, chance and necessity, quantity and quality, subject and object, holism and reductionism – are losing their absolute character: the dilemma between this or that tends to be replaced by either this or that, as by this is that. For Scienza Nuova, it is not a matter of destroying the traditional alternatives; it is not a question of presenting a “monistic solution as if it were the essence of truth”. The alternative terms become “antagonistic, contradictory, and at the same time complementary in a broad vision, which will need to be reconnected and confronted with new alternatives” (MORIN, 2007a, p. 54).

The paradigm of complexity (or complex thinking) is still an uncertain possibility, an emergency that asserts itself as the failures of GWP, positivism, functionalism, structuralism, behaviorism – and to the extent that a new type emerges in the educational and scientific environment. The paradigm of complexity is also part of a cultural tradition dating back to Heraclitus and Lao Tzu, not limited to articulations of post-quantum physics, to articulations of ecology with other sciences throughout the twentieth century, to cybernetics, to the theory of systems, information theory, poly disciplinary and transdisciplinary innovations and hybridizations. In complex thinking, several less comprehensive paradigms coexist, each having different space, although maintaining different relationships with others and remaining blind to others.

In several parts of his extensive work, Morin distinguishes notions of complexity, which are defined in the form of tension-type dualities: a) low complexity versus high complexity; b) restricted complexity versus broad (or generalized) complexity. In short, low complexity implies strong centralization, hyperspecialization, and high complexity implies polycentrism, eccentric, integration involving multiple communications, specializations, and multicompetence. The restricted complexity implies modeling of complexity and the notion of complexity sciences, while the broad complexity implies an epistemological approach beyond theoretical and the notion of complex thinking (MORIN, 1986a, 2007b; BOEIRA, 2014).

It is these notions of complexity that permeate all of Morin's work and that need to be considered in the approach to the concepts of organization, self-organization, or self-organization.

According to Myron Kofman's assessment,

The great importance of Morin is to have been the most far-reaching thinker of the concept (or paradigm) of self-organization. This concept in Morin's development associates, but does not unify, physics, biology, the humanities, and philosophy in what he sees as a grand and perfect circular movement. In this task, Morin has in the American continent several thinkers as counterparts, such as Gregory Bateson, Francisco Varela, and Maruyama; as well as in France, among which are Prigogine and Stengers and Henri Atlan as the most crucial for their enterprise (KOFMAN, 1996, p.17).

In effect, the idea of organization occupies a central place in several volumes of his main work (*La Méthode*):

The science of order repelled the problem of organization. The science of disorder, the second principle, only reveals it in the void, negatively. The science of interactions only leads us to their antechamber. The organization is absent from physics; it is a paradox of thermodynamics, the enigma of the suns, the mystery of microphysics, the problem of life. But what is the organization? (MORIN 1977, 93).

From this initial questioning, the author advances to the analysis of every object as a system, like an atom, a system of particles in mutual interactions. Recursively articulating the notions of interactions, interrelations, organization, and system, he presents the first definition of organization:

It is the disposition of relations between components or individuals, which produces a complex unit or system, endowed with qualities unknown at the level of the components or individuals. The organization interrelates, interrelatedly, elements or events or diverse individuals that become the components of a whole. It ensures solidarity and solidity about these connections and therefore guarantees the system a particular possibility of duration despite the random disturbances. Thus, the organization transforms, produces, and links maintained (MORIN 1977, p. 101).

Morin did not close the idea of organization within the notion of the system nor in the notion of cybernetics (machine). On the contrary, he linked the idea of system and machine to the idea of organization. For him, the notion of the organization goes beyond the notion of the system and of order and installs itself in its physics, in the infrastructure of the universe. "The ability to organize itself is the fundamental, amazing and evident property of physics. It is, however, the great absence of physics" (MORIN, 1977, p.100).

The author criticizes the general theory of Von Bertalanffy systems, although he acknowledges that it has innovative aspects. Morin argues that the theory has failed to "deepen its foundation and reflect on the concept of the system" (MORIN 1977, p. 98). After pointing out several system definitions, of several authors, Morin concludes:

The organization, which was absent from most of the definitions of the system, muffled the idea of totality and the notion of interrelationships while linking the concept of the whole to that of interrelationships, becoming inseparable from the three notions. From here we can conceive the system as an organized global unit of interrelations between elements, actions or individuals (MORIN, 1977, p. 100).

The theory of the system that Morin proposes is also anti systemic since he conceives the system as both solution and problem.

We have to move towards the problem, not the solution. My purpose is not to undertake a systemic reading of the universe; cut, classify, nor hierarchize the different types of systems from the physical systems to the homo system. My purpose is to change my gaze on everything, from physics to homo. It is not to dissolve the sense of being, existence, and life in the system, but to understand the sense of being, existence, and life, with the help of the system (MORIN, 1977: 145).

The author conceives a theory of organization in the form of a method of organizational phenomena, of the organizing (self-eco-organizing) process. It is an open theory, which does not pretend to exhaust the real one, but to reveal its complexity, as it is possible to perceive in the following passage:

[...] I evoke biological organization and social scientific organization, but always from the angle of physical organization. In each development of the physical concept of organization, biological / anthropossociological examples/references will emerge. This fact will seem extremely confusing to those who believe that physics, biology, anthropology, and sociology are separable and incommunicable essences. But here, this fact is all the more necessary because everything that is an organization concerns biology and anthropossociology, and also because of problems and organizational phenomena, virtual or atrophied at the level of physical organizations, manifest and expand in their biological and anthropossociological developments. This means that biological and anthropological phenomena and problems need, to be conceived and understood, a formidable organizational infrastructure, in other words, physical (MORIN 1977, p. 31).

Morin, throughout his work, focused on the complexity of the organizational phenomenon, primarily the organization of knowledge (epistemology, method) and the political-civilizing problem (PENA-VEGA; WOLTON, 2014).

## 6 FINAL CONSIDERATIONS: STACEY AND MORIN COMPARED

Among the many possibilities for understanding the field of complexity studies, as seen previously, we consider plausible, for the comparative understanding of Stacey and Morin's

works, to highlight the two most relevant perspectives according to Alhadeef-Jones (2008): complex adaptive systems and complexity intelligence studies.

There is a tension between contributions from Anglo-Saxon culture and countries in the Northern Hemisphere and contributions from Latin culture and nations from both North (Europe) and South (Latin America). In this broad context, it is possible to compare the approaches of the two authors and aspects of their trajectories.

Both had transdisciplinary trajectories, somehow transgressing the compartments of the disciplinary hyperspecializations of the conventional academic formation.

We observe a greater distance between authors regarding complexity types, especially considering the beginning of Stacey's trajectory with econometrics, which represents a simplifying approach to Morin. It can be said then that Stacey begins his path close to the restricted complexity (in Morin's terminology), which he expands from his approach to chaos theory. Stacey approaches the Belgian Ilya Prigogine with the approach to creativity and complexity in a transdisciplinary way. Prigogine is also Morin's reference and therefore represents a bridge between the two approaches compared here.

Stacey's approach to complex adaptive systems from the Santa Fe Institute proposition, like so many other authors in the Anglo-Saxon culture, is considered by Morin as part of the restricted complexity type. Models and abstractions overlap with high and wide complexity, these types including models/abstractions, without reducing complexity. Stacey advances trans disciplinarily throughout her career, becoming critical of the notion of complex adaptive systems and proposing a more qualitative view of organizations. This brings us closer to Morin's high and broad types of complexity, especially when he makes a critical and epistemological account of the history of organizational theories (STACEY, 2010). The author remains fundamentally within the social sciences.

It should also be noted that Stacey's trajectory shows a thematic transition, from the focus on market organizations to public organizations, with a critical, political approach, as well as a growing emphasis on methodological aspects (qualitative methods). Such a transition also brings us closer to Morin's trajectory, which is marked by the focus on public organizations, politics (civilization), the critical approach and the relationship between epistemology and methods of organizing inter and transdisciplinary knowledge.

Morin's trajectory in the natural sciences has occurred since 1969 (in the USA), with the objective of articulating dialogically and recursively the sciences of nature, the humanities and philosophy, with an epistemological approach, in search of a critical method to the tendency of the disciplinary closure of sciences and theories.

It is stated that Stacey approaches the critical and broad approach to the complexity advocated by Morin. But while Stacey remains in the social sciences, Morin articulates social sciences, biophysics, and philosophy. As far as tensions in the field of complexity studies are concerned, this comparison indicates a relative advance from the perspective of complexity intelligence (Latin culture) on the perspective of complex adaptive systems (Anglo-Saxon culture).

Finally, it is also relevant to consider that Stacey's work has been used more in consulting and research work than in educational work, while Morin's work has been used more in educational and research work than in consulting. This difference highlights the direction taken by the two works: while Stacey focused on the managerial and strategic problems of organizations, Morin focused on the complexity of organizational phenomena, especially the organization of knowledge (epistemology, method) and political-civilizational problems.

## REFERENCES

- AGOSTINHO, M.E. **Complexidade e organizações**: em busca da gestão autônoma. São Paulo: Atlas, 2003.
- ALHADEFF-JONES, M. Three generations of complexity theories: nuances and ambiguities. **Educational philosophy and theory**. Philosophy of Education Society of Australasia. Vol. 40, no. 1, p. 66-82. Published by Blackwell Publishing, 9600 Garsington Road, Oxford, OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA, 2008.
- ALMEIDA, M. C. **Para comprender la complejidad**. México: Multiversidad Mundo Real Edgar Morin, 2008.
- APOSTEL, L.; BENOIST, J. M.; DUFRENNE, M.; MOMMSEN, W. L.; MORIN, E.; PIATTELLI-PALMARINI; SMIRNOV, S. N.; UI, J. **Interdisciplinarietà y ciências humanas**. Madrid: Ed. Tecnos; Paris: UNESCO, 1982.
- BATTRAM, R. **Navegando na complexidade**: o guia essencial para a teoria da complexidade nos negócios e na gestão. Lisboa: Instituto Piaget, 2004.
- BENKIRANE, R. **A complexidade, vertigens e promessas**. 18 histórias de ciência. Lisboa: Instituto Piaget, 2002.
- BIANCHI, F. **Le fil des idées**. Paris: Editions du Seuil, 2001.
- BOEIRA, S. L. Complexidade e transdisciplinaridade: organizações latino-americanas no contexto da crise civilizatória. In: PHILIPPI JR, A.; FERNANDES, V. (Org.). **As Práticas de interdisciplinaridade no ensino e pesquisa**. 1ed.São Paulo: Manole, 2014, p. 209-262.
- BORGATTI NETO, R. **Perspectivas da complexidade aplicadas à gestão de empresas**. Tese de doutorado em engenharia da produção. Escola Politécnica da USP, 2008.
- CASANOVA, P. G. **As novas ciências e as humanidades**: da academia à política. São Paulo: Boitempo, 2006.
- ETKIN, J. **Política, gobierno y gerencia de las organizaciones**. Buenos Aires: Prentice Hall, 2000.
- ETKIN, J. **Gestión de la complejidad en las organizaciones**: la estratégia frente a lo imprevisto y lo impensado. México: Oxford University México, 2003.
- ETKIN, J. SCHVARSTEIN, L. **Identidad de las organizaciones**: invariância y cambio. 6ª reimp. Buenos Aires: Paidós, 2005.
- ETZIONI, A. **Organizações complexas**: estudo das organizações em face dos problemas sociais. São Paulo: Atlas, 1978.
- FADUL, E. M.; Mac-Allister da Silva, M. Limites e possibilidades disciplinares da administração: limites e possibilidades disciplinares da administração pública e dos estudos organizacionais. **RAC**, Curitiba, v. 13, n. 3, art. 1, p. 351-365, Jul./Ago. 2009.
- FELLMAN, P.; BAR-YAM, Y.; MINAI, A. (Eds.) **Conflict and complexity: contering terrorism, insurgency, ethnic and regional violence**. New York: NECSI/Springer, 2015.

GELL-MANN, M. **O quark e o jaguar**: as aventuras no simples e no complexo. Rio de Janeiro: Rocco, 1996.

GUERREIRO RAMOS, A. **A nova ciência das organizações**: uma reconceitualização da riqueza das nações. Rio de Janeiro: FGV, 1981.

JAPIASSU, H. **O sonho transdisciplinar**: e as razões da filosofia. Rio de Janeiro: Imago, 2006.

KAUFFMAN, S. **At home in the universe**: the search for the laws of self-organization and complexity. New York: Oxford University Press, 1995.

KOFMAN, M. **Edgar Morin**: do big brother à fraternidade. Lisboa: Instituto Piaget, 1996.

MARIOTTI, H. **Pensando diferente**: para lidar com a complexidade, a incerteza e a ilusão. São Paulo: Ed. Atlas, 2010.

\_\_\_\_\_. **Complexidade e sustentabilidade**. São Paulo: Atlas, 2013.

MARTINET, A. C.; PESQUEUX, Y. *Épistémologie des sciences de gestion*. Paris: Vuibert, 2013.

MORENO, J. Fuentes, autores y corrientes que trabajan la complejidad. In: MORENO, J. ; OSORIO, S.; PICÓN, Y.; JIMÉNEZ, J.; VALLEJO-GOMEZ, N.; MARÍN, R.; LONDOÑO, S.; RUIZ, L.; MARIQUE, E; VELLILA, M.; GÓMEZ, E.; ARROYAVE, D. **Manual de iniciación pedagógica al pensamiento complejo**. Instituto Colombiano de Fomento de la Educación Superior (ICFES); UNESCO; CORPORACIÓN PARA EL DESARROLLO COMPLEXUS. Ediciones Jurídicas Gustavo Ibáñez, 2002.

MORIN, E. **O método**. Vol. 1. A natureza da natureza. Editions du Seuil; Publicações Europa-América, 1977.

\_\_\_\_\_. **La méthode 3**. La connaissance de la connaissance. Paris: Editions du Seuil, 1986a.

\_\_\_\_\_. Complexité et organisation. In: Audet, M. e Malouin, J.-L.. **La production des connaissances scientifiques de l'administration**. Québec: Les Presses de l'Université Laval, 1986b.

\_\_\_\_\_. **O método IV**. As idéias: sua natureza, vida, habitat e organização. Portugal: Publicações Europa-América, 1991.

\_\_\_\_\_. Restricted complexity, general complexity. Presented at the **Colloquium Intelligence de la complexity**: Epistemologie et pragmatique, Cerisy-La-Salle, France, June 26th, 2005. Translated from French by Carlos Gershenson.

\_\_\_\_\_. **Introdução ao pensamento complexo**. 3ª Ed. Porto Alegre: 2007a.

\_\_\_\_\_. Complejidad restringida y complejidad generalizada o las complejidades de la Complejidad. In: **Utopía y Praxis Latinoamericana**. Revista Internacional de Filosofía Iberoamericana y Teoría Social. Año 12, No. 38, pp. 107 – 119. Universidad del Zulia. Maracaibo-Venezuela, 2007b.

MORIN, E.; LE MOIGNE, J.L. **A inteligência da complexidade**. São Paulo: Peirópolis, 2000.

PENA-VEGA, A.; WOLTON, D. **Edgar Morin**: um pensamento livre para o século 21. Rio de Janeiro: Garamond, 2014.

PERROW, C. **Complex organizations**: a critical essay. 2ª ed.. Dallas, Oakland, Palo Alto: Scott, Foresman and Company, 1973. ISBN 0-673-15205-7.

PETRÁGLIA, I. C. **Edgar Morin**: a educação e a complexidade do ser e do saber. Petrópolis: Vozes, 1995.

PRIGOGINE, I.; STENGERS, I. **A nova aliança**: a metamorfose da ciência. Brasília: Ed. UnB, 1991.

REED, M. Teoria organizacional: um campo historicamente contestado. *In*: CALDAS, M.; FACHIN, R.; FISCHER, T. (Orgs.) **Handbook de estudos organizacionais**. Vol. 1. Modelos de análise e novas questões em estudos organizacionais. São Paulo: Atlas, 1999.

SÉGUIN, F.; CHANLAT, J.-F. **L'analyse des organisations**. Montreal: Gaetan-Morin, 1992.

SERVA, M. O surgimento e o desenvolvimento da epistemologia da administração – inferências sobre a contribuição ao aperfeiçoamento da teoria administrativa. **Revista Gestão Organizacional**, vol. 6, p. 51-64. Edição Especial, 2013.

SERVA, M., DIAS, T., ALPERSTEDT, G. Paradigma da complexidade e teoria das organizações: uma reflexão epistemológica. **RAE – Revista de Administração de Empresas**, vol. 50, n. 3, p. 276-287, jul/set., 2010.

SOTOLONGO, P.; DELGADO, C. **La revolución contemporánea del saber y la complejidad social**: hacia unas ciencias sociales de nuevo tipo. Buenos Aires: Consejo Latinoamericano de ciencias sociales (CLACSO). 2006. ISBN 987-1183-33-X.

STACEY, R. **The chaos frontier**: creative strategic control for business. Oxford: Butterworth-Heinemann, 1991.

\_\_\_\_\_. **Complexity and creativity in organizations**. San Francisco: Berrett- Koehler, 1996.

\_\_\_\_\_. **Complexity and organizational reality**: uncertainty and the need to rethink management after the collapse of investment capitalism. 2ª ed. London and New York: Routledge, 2010.

\_\_\_\_\_. **The tools and techniques of leadership and management**: meeting the challenge of complexity. London and New York: Routledge: 2012

STACEY, R.; GRIFFIN, D. (Eds.) **A complexity perspective on researching organizations**. London; New York: Routledge, 2005.

STACEY, R.; GRIFFIN, D. (Eds.) **Complexity and experience of managing in public sector organizations**. London; New York, 2006.

STACEY, R.; MACINTOSH, R.; MACLEAN, D.; GRIFFIN, D. (Eds.) **Complexity and organization**: readings and conversations. New York: Routledge, 2006.

STACEY, R.; MOWLES, C. **Organization dynamics**: the challenge of complexity to ways of thinking about organizations. 7th Edition. London: Harlow: Person Education Limited, 2016.

STENGERS, I. **A invenção das ciências**. São Paulo: Ed. 34, 2002.

WESTRUM, R.; SAMAHA, K. **Complex organizations**: growth, struggle, and change. New Jersey: Prentice-Hall, 1984.

WITTMANN, M. L. **Administração**: teoria sistêmica e complexidade. Santa Maria: Editora UFSM, 2008.